

WALT DISNEY WORLD®

PROJECT RED

LOBSTER

OPERATIONS AND REPAIR MANUAL



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Revision History

Date	Version	Description	Author
02/27/2024	1.0	First iteration	Bridget Reilly Beauchamp, Brieaunna Avery
04/29/2024	1.1	Addition of Comprehensive Materials	Bridget Reilly Beauchamp, Brieaunna Avery
06/12/2024	2.2	Final Iteration before installation	Bridget Reilly Beauchamp, Betsy Falk

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1 Introduction and Preface

1.1 General Project Information

1.1.1 Notes from Monkey Boys Productions

This character is designed for use in collaboration with Walt Disney World/Disney's Hollywood Studios for use in the Voyage of the Little Mermaid Theater. All information contained herein was prepared for Monkey Boys Productions, LLC and is property of the Disney Corporation and not to be used in any way without their consent.

1.1.2 From the Disney Scope of Work, section 1.2-1.4:

General Resort Overview

Movie magic comes to life at Disney's Hollywood Studios. This park features 8 sections: Hollywood Boulevard, Echo Lake, Grand Avenue, Sunset Boulevard, Commissary Lane, Star Wars: Galaxy's edge, Toy Story Land and Animation Courtyard.

General Venue Overview

Project Red will take place in the Voyage of the Little Mermaid (VOLM) Theater located within the One Man's Dream building next to Animation Courtyard in Disney's Hollywood Studios. The VOLM Theatre is a 400-seat theatre with a small, elevated stage with access between the house and backstage on Stage Left. All elements must fit through a double door at most due to limited load in infrastructure.

General Show Overview

A reimagined retelling of the classic film seen through the unique perspective of Ariel, a 16-year-old girl. Through cutting edge technology, mixed media, puppetry, and live actors, we follow Ariel's journey as she boldly pursues her dream to be part of the human world above, even if it means leaving her under the sea home.

1.2 Item Description

1.2.1 Summarized from the Disney Scope of Work, Section 4.8.1:

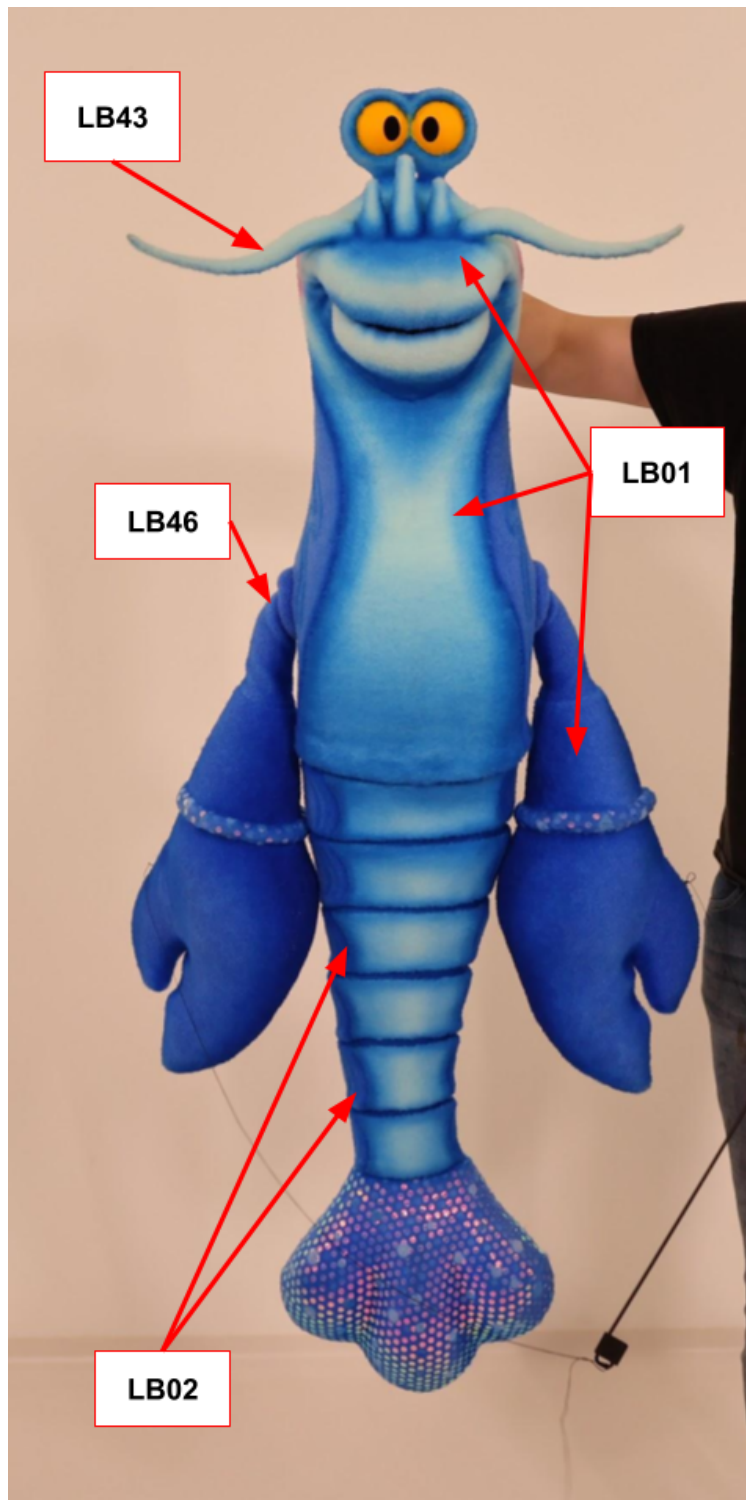
"The blue Lobster is a hand puppet performed by a single puppeteer. Control of the claws will be done via marionette bar and line."

1.2.2 Basis of Engineering

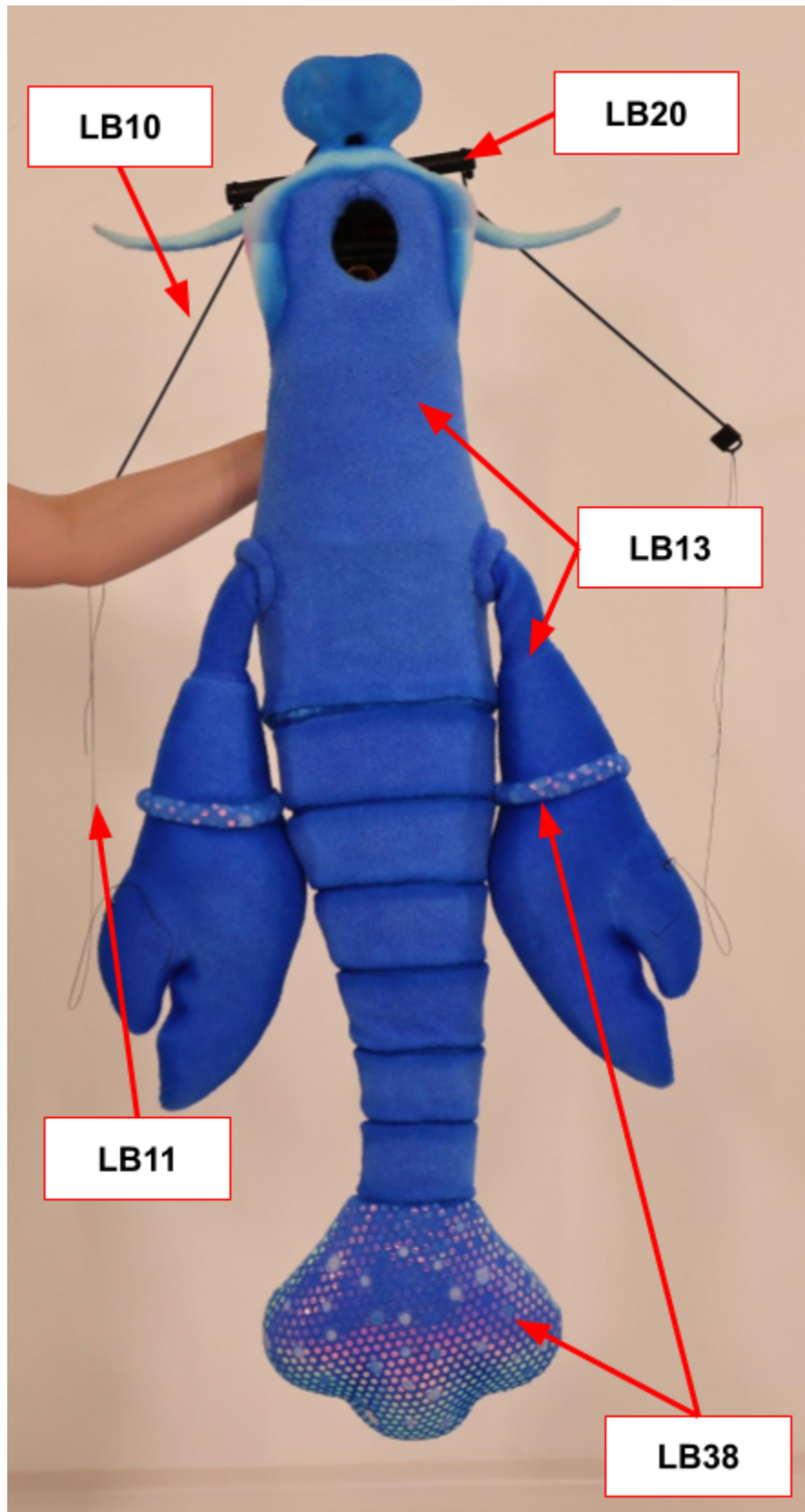
The Lobster is constructed of soft and closed cell foam, with 3D printed eyes and bra-foam claws. The arm rods are carbon fiber and the marionette controller is 3D printed. The fabrics and paints are treated to be UV reactive.

2 Construction and Assembly

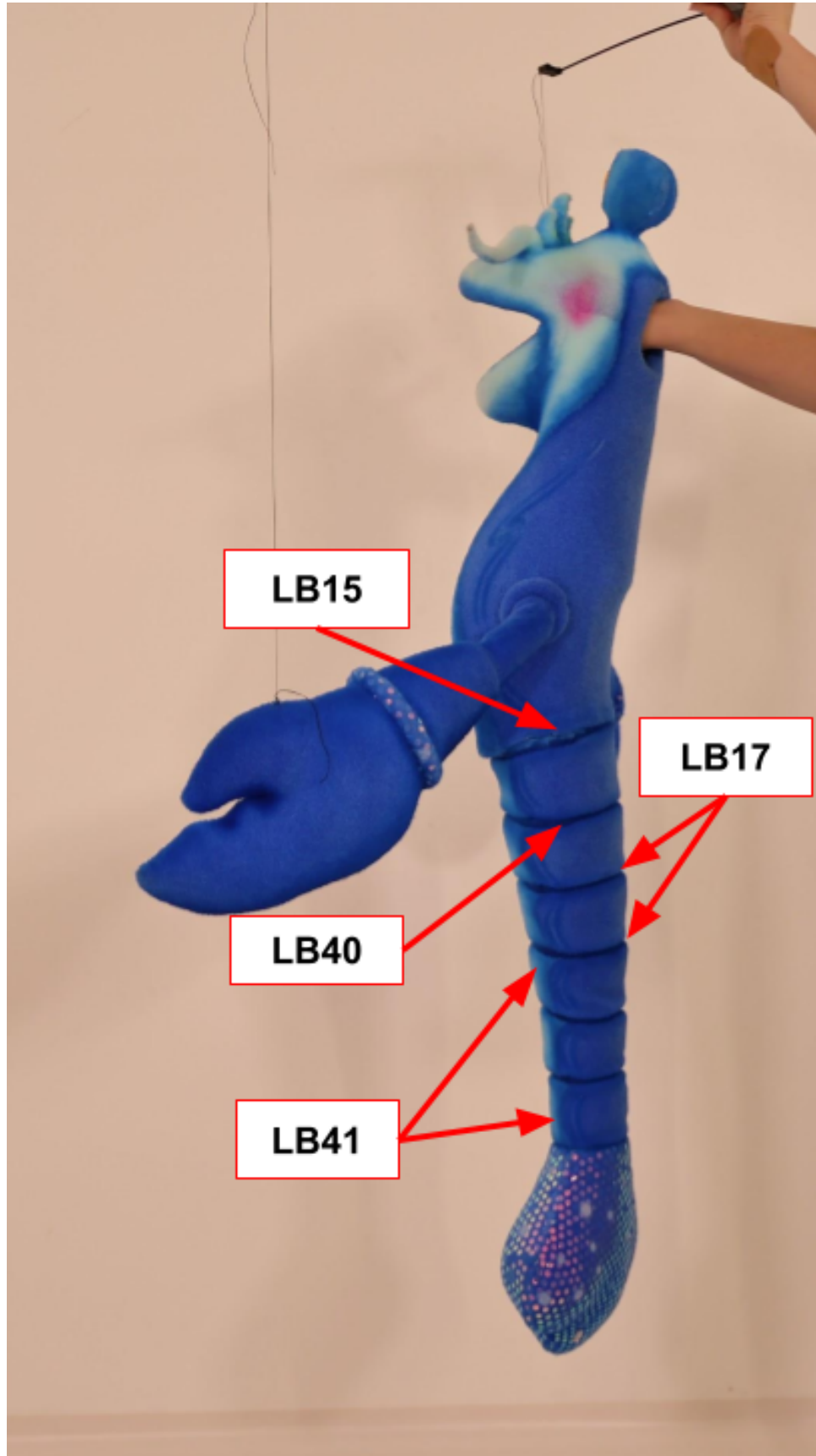
2.1 Front View



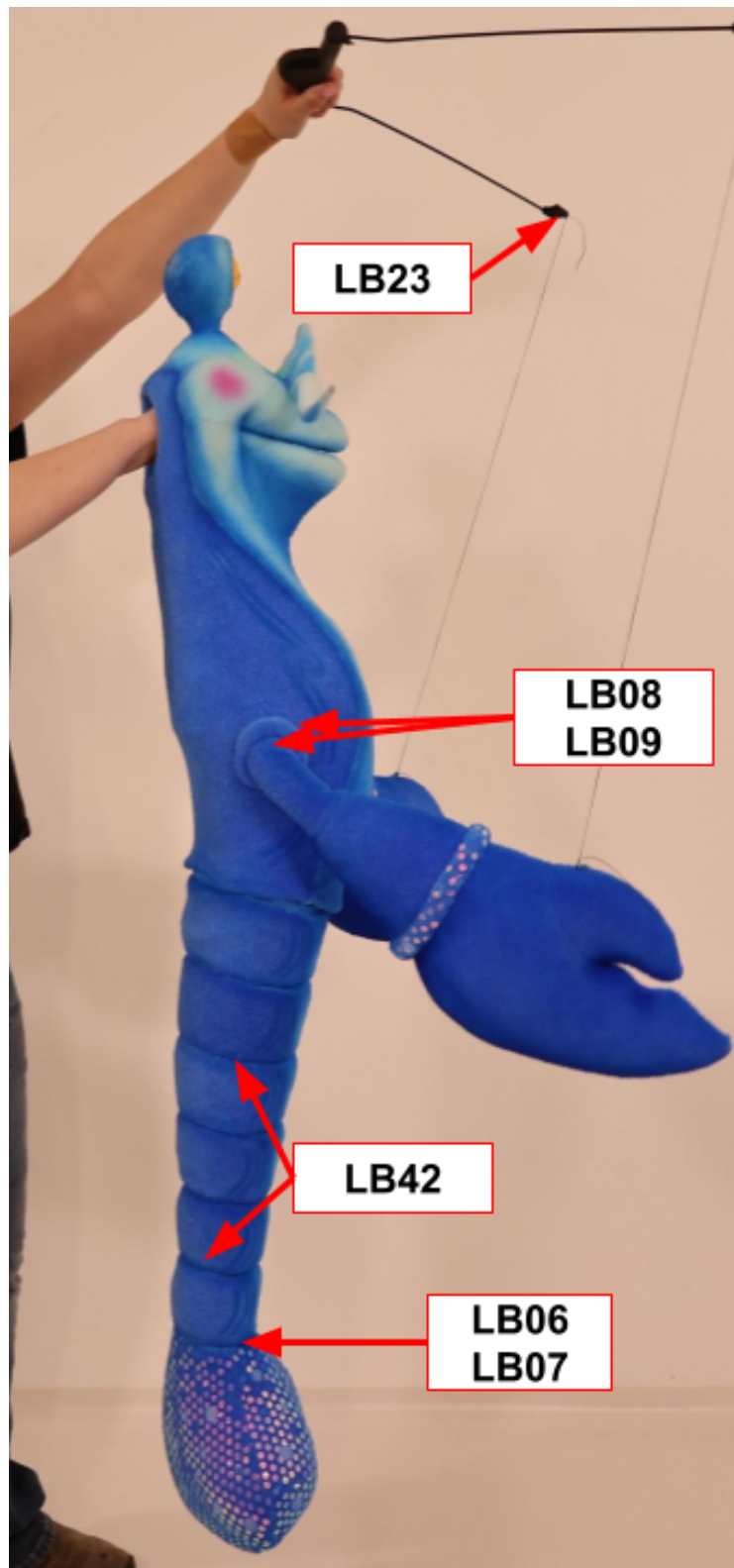
2.2 Rear View



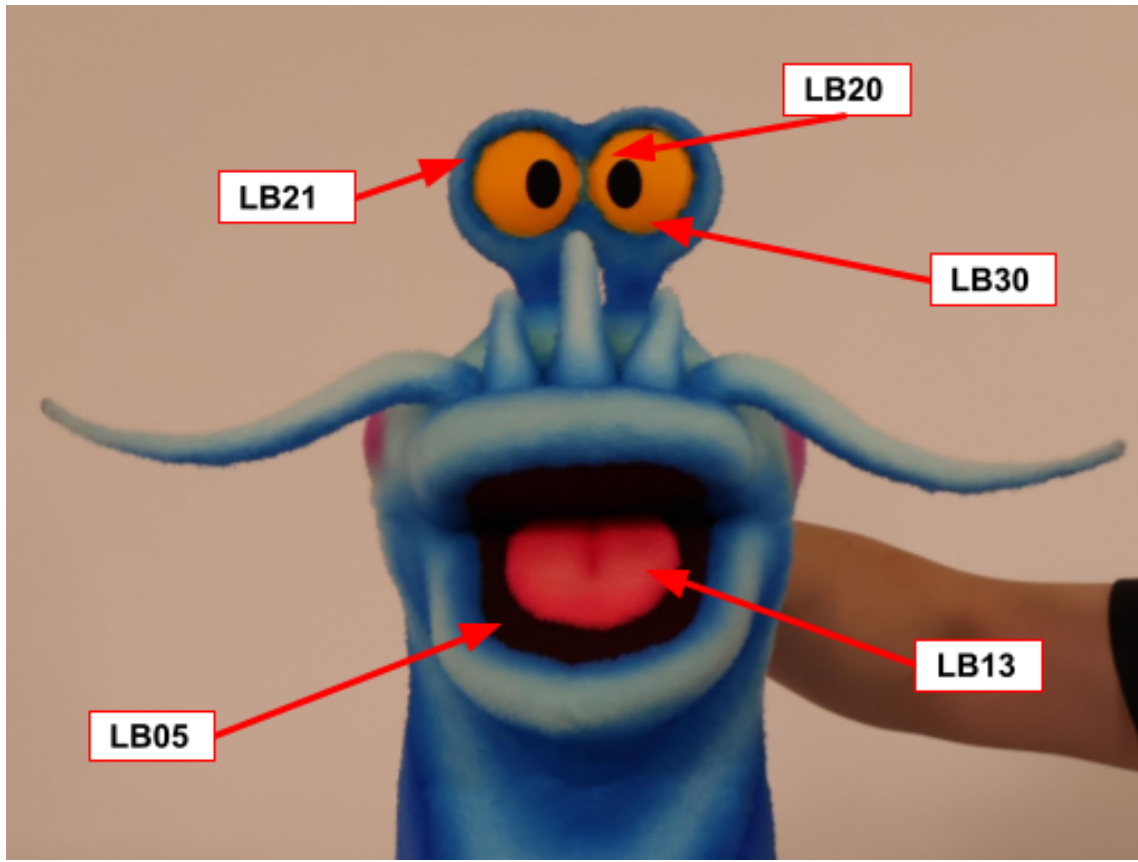
2.3 Left view



2.4 Right View



2.5 Closeup of Face



2.6 UV View



3 Description of Operating Modes

3.1 Operating Modes

3.1.1 Storage

The Lobster puppet will be stored on a stand during the show.

Between performances, the puppet should be covered with its custom cover in order to protect it from the elements.

At no point should a puppet be stacked on top of or underneath another puppet or prop.

3.1.2 Performance

The Lobster puppet is operated by a single performer. They should be able to do all performing actions without assistance.

3.2 Operating Procedures

3.2.1 Removing the puppet from the stand

***Please ensure that you have clean hands before handling this puppet. ***

To remove the Lobster from the stand, lift the control rod with one hand while lifting the puppet by the hole in the back of the head and slide the puppet free of the stand.

3.2.2 Action: Moving Mouth

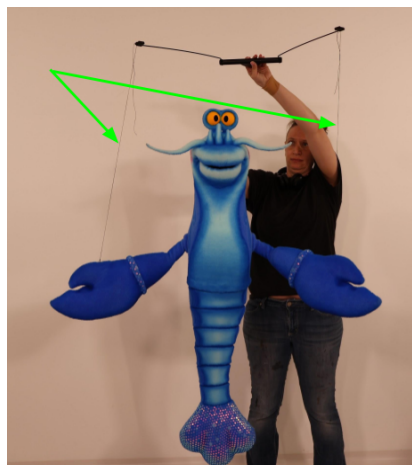
Character's mouth is open in a neutral position. The puppeteer should insert their dominant hand into the opening in the back of the lobster's head, and insert their fingers and thumb into the finger loops on the top and bottom palate. Close and open the mouth by closing and opening the performer's hand.

3.2.3 Action: Moving Head

The performer can achieve a limited range of movement by pivoting their wrist while the hand is inside the puppet's head. Please do not force the puppet past the point of first resistance or the foam will tear.

3.2.4 Action: Moving Hands

To manipulate the Lobster's hands, the performer should grasp the control rod in their non-dominant hand. Raising and lowering the rod will raise and lower the claws. Tilting the rod will raise and lower the claws in opposition to one another. In order for the hands to activate, the strings must be fully extended above the claws, with no slack in the line.



3.2.5 Placing puppet on stand

To place the puppet on its stand, reverse the actions described in section 3.2.1. Make sure the control rod is resting in its cradle before replacing the cover.

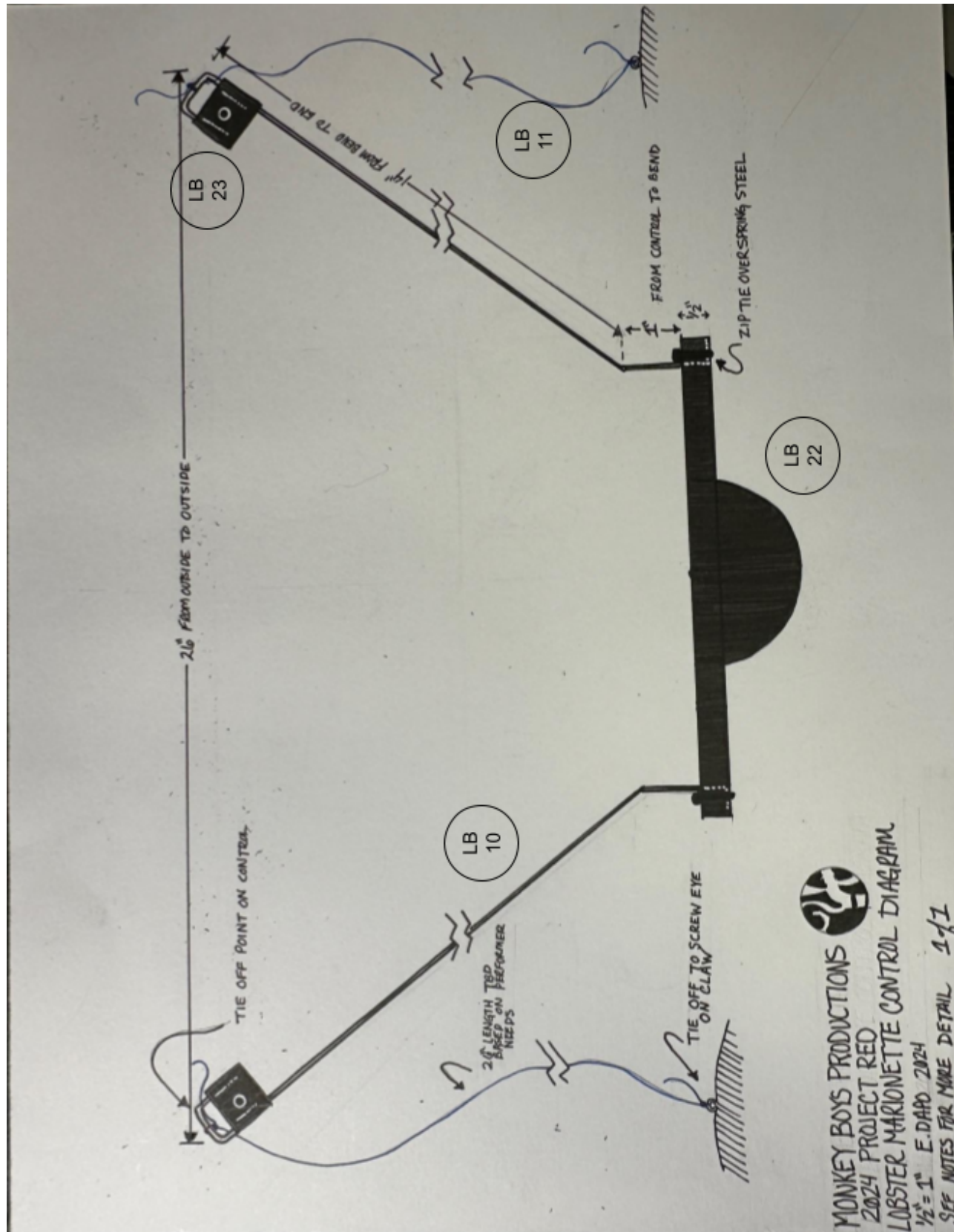
3.2.6 Storage

To store the puppet ensure that the puppet is stable on the stand and lower the cover over the top. Draw the string around the bottom of the puppet and pull the cord lock to secure it in place. The cover does not need to be cinched completely closed around the stand.

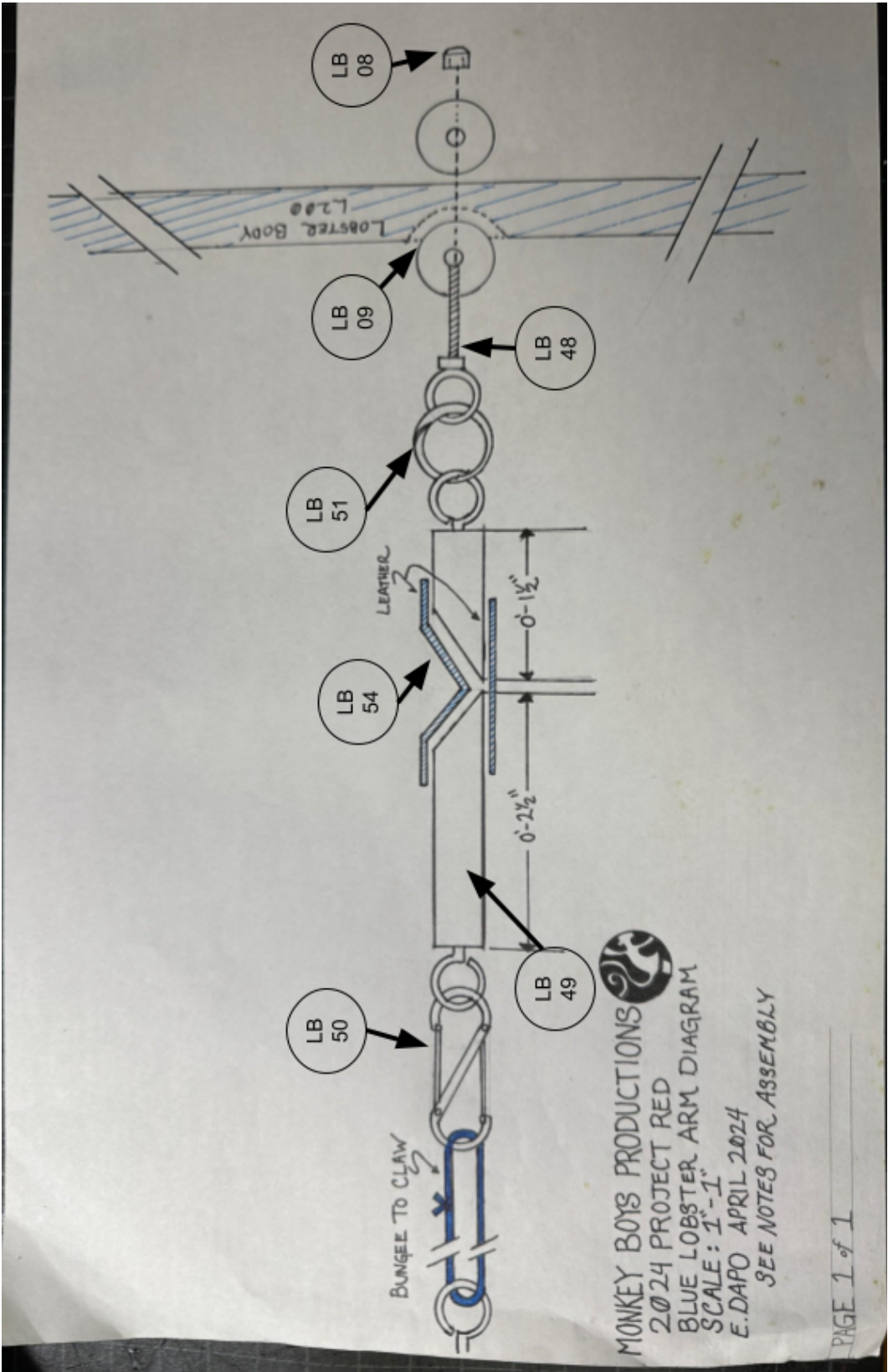


4 Detailed Diagrams of Mechanisms and Hardware

4.1 Control Rod and strings



4.2 Lobster Claw Internal



5 Safety and Hazards

5.1 Safety Precautions and Hazard Identification

As is the case with any puppet, care must be taken when handling this item to make sure that the item does not become damaged beyond normal expectations.

- Care should be taken that the puppet and its accessories do not crash against walls, doorframes, other props, or other items. This could cause the puppet to become damaged or soiled.
- If the hardware on the puppet becomes loosened, pieces of the puppet will be likely to behave erratically. Care should be taken to ensure that all hardware is present and properly tightened at all times.
- All electrical systems should be regularly checked and maintained to the utmost safety standards.

5.2 Hazard Mitigation Strategy

There is always a chance of breakage and small injury when handling puppets and props, but Monkey Boys Productions has done their best to keep these chances low and keep both performers and technicians safe. All items have been built to be safe to handle with little chance of injury when handled correctly.

- All carbon fiber parts have been sanded to a smooth surface and sealed or covered.
- All wires and other such electrical parts have been assembled in the most safe and logical way to avoid injury and avoid becoming a hazard to performers or technicians.
- Weights and distribution of weight have been thought through to make the carrying and handling of the props easier on the performers to avoid muscular injury or strain.

These puppets are not a hazard to the environment or the performance location.

6 Repair & Service

6.1 Daily Checks and Inspections

The following list is provided as a basis for daily inspection of the puppet. Items may be added to or removed from this list as the on-site technical director sees fit.

Check Point	How to Inspect
Marionette String	Visually and physically check that the strings are secure to the puppet and controller
Mustaches	Visually inspect to make sure the curve is correct

6.2 Periodic Testing

The following list is provided as a basis for periodic testing of the puppet. Items may be added to or removed from this list as the on-site technical director sees fit.

Check Point	How to Inspect	When to Inspect
eye bolts in claws	visually & manually	weekly
tail bungees	visually & manually	monthly

6.3 Routine Corrective Maintenance

The following list is provided as a basis for routine maintenance of items that will commonly need replacement or adjustment. Items may be added to or removed from this list as the on-site technical director sees fit.

Check Point	Corrective Action	When to Address
UV paint	touch up	as needed
iron-on transfers	reapply/reattach	as needed

6.4 Puppet-specific Service Items

A basic service kit has been supplied for use with this specific prop. Refills of the items in this kit can be handled by direct purchase from the source or by emailing contact@monkeyboysproductions.com. A full manifest of these items is supplied inside the kit and is included on the final page of this manual.

6.5 Cleaning Fabrics

*****Please note that using liquids or detergents on UV treated fabrics may cause the UV reactivity to fade*****

6.5.1 Spot Cleaning

- Spot clean as soon as dirt and grime are noticed.
- Gently wipe with Shout or Tide wipe.
- Dab product into deeper stains.
- Blot and gently wipe with a clean, white towel.
- Make sure that the area dries well.

6.5.2 Deep Cleaning Option 1 for widespread stains

- Dilute a drop of Woolite detergent in room temperature water.

- Dab on with a white cloth.
- Gently wipe & dab with clean white towel.

6.5.3 Deep Cleaning Option 2 for deep stains

- Spray Bissell Pro Carpet Cleaner on worst of spot.
- Allow it to rest for 1 minute.
- Carefully dab and wipe with a clean towel, being mindful that fabric doesn't pull away from the material beneath.

6.5.4 In all cases

- DO NOT rub, twist, or pull when cleaning
- DO NOT use heat, steam, or pressure
- DO NOT use bleach or other harsh chemicals
- DO NOT immerse in or saturate with water

6.6 Cleaning Hard Surfaces

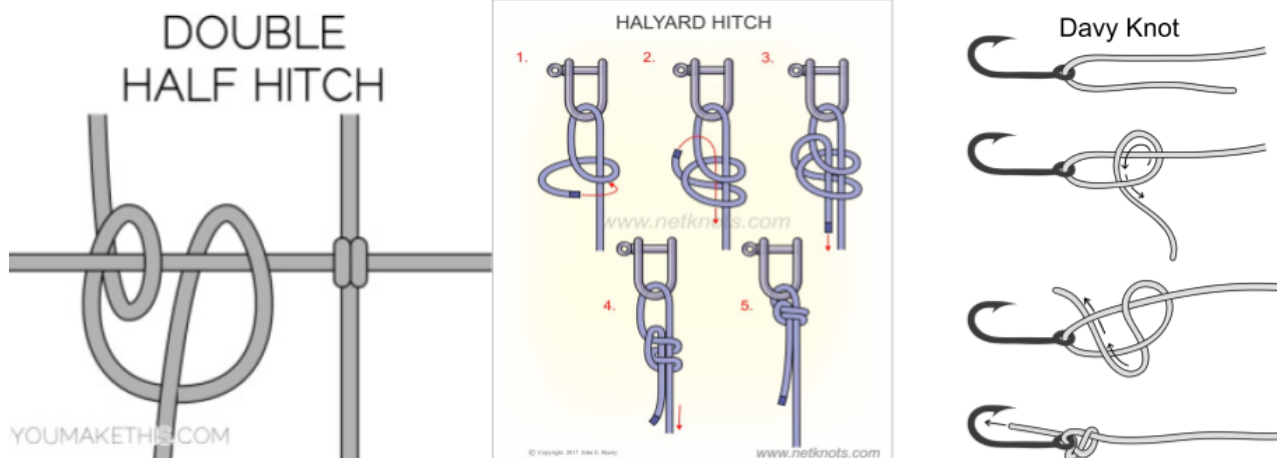
******Please note that using liquids or detergents on UV treated surfaces may cause the UV reactivity to fade******

- Hard surfaces (Carbon fiber, plastic, aluminum, grip tapes, etc.) can be wiped clean with water or a mild cleanser such as Dawn dish detergent diluted in water.
- Always use a soft cloth and work carefully to avoid scratching or damaging any coatings or paints.
- Always wipe all surfaces dry immediately after cleaning to avoid leaving water spots or otherwise damaging finishes.

7 Detailed Maintenance Procedures

7.1 Specialty information about restringing the controller

1. Remove the broken/old line from the puppet and the controller
2. Cut two new pieces of line at 35" in length.
3. Tie off the line to the claws first, using any of the following knots:
 - a. Double half hitch (see below)
 - b. Halyard hitch (see below)
 - c. Davy knot (see below)



Trolling line is very slippery, so a simple double knot will not last long. It is optional to use glue to finish the knot to ensure it doesn't slide or come undone.

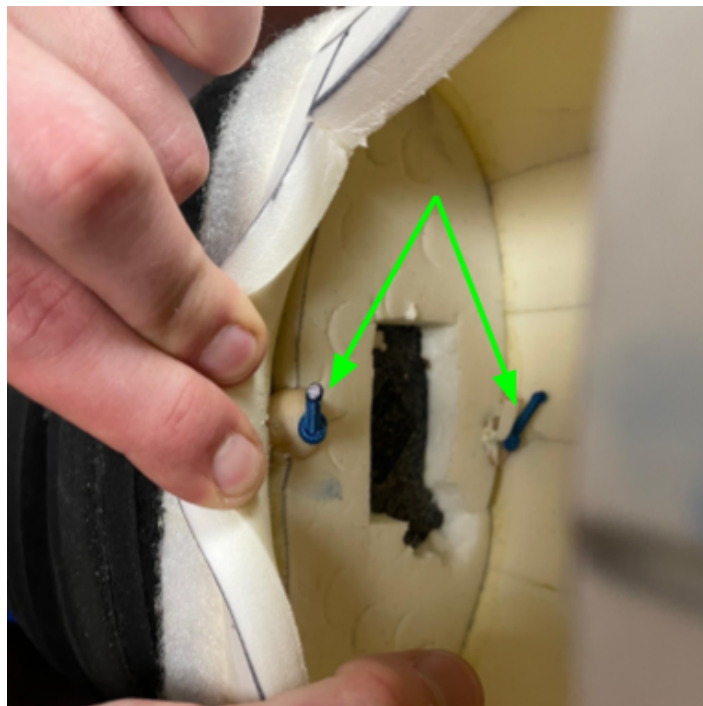
4. It is easiest to hang the puppet and controller on a stand at a point relative to the length the strings will eventually be for the performer. Alternatively, having a second set of hands to hold the puppet and controller for restringing is also useful.
5. Tie off the string to the control at the desired height. The appropriate length is demonstrated in figure 7. Claws are somewhat elevated when the control is held above the head of the puppet.
6. If the knots need adjusting, use a thick needle to pull the knots loose enough to slide the line around. When happy with the length, pull tight. (Optional glue at this point as well)
7. Cut off the excess line by the claw and controller.

7.2 Specialty information about restringing the tail

1. Unbutton the lower torso from the tail
2. Lift the torso fabric to access the back hole panel



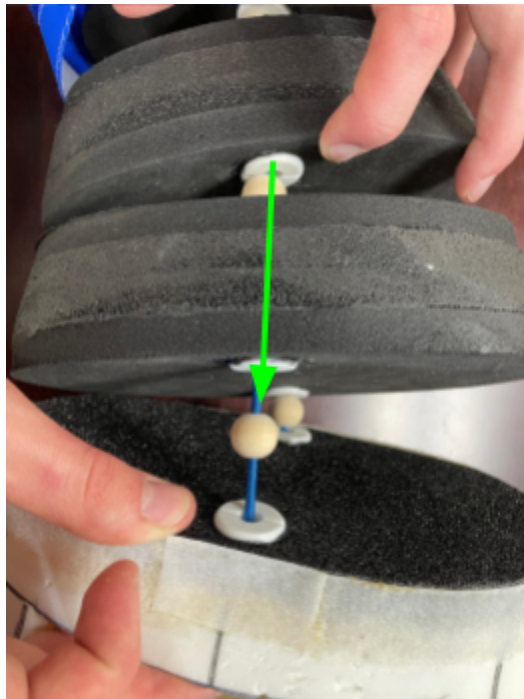
3. Inside the torso, the tail is tied off above wooden balls. Untie the knots and remove the balls.



4. The tail should now be free. Gently remove the bungee from the torso, separating the tail from the torso.
5. Carefully un-velcro the tail cover and pull down. Be mindful not to lose any of the pieces and remember the order that they are removed in.



6. At the end of the tail, untie the bungee from the screw eyes. Replace old bungee with a new bungee. Tie a strong knot and reinforce with a tab of gaff tape if necessary.
7. Reassemble the tail, running the bungee through the tail pieces and the in between ball joints. Run the bungee through the torso bottom, then through the two balls and tie a knot. Reinforce with gaff tape if desired.



8. Pull the tail cover back up and re-velcro to each tail piece
9. Pull the torso fabric back down and reconnect snaps.
10. Test the tail movement. Bungee tension should allow for easy movement but also be tight enough to the tail swing back. If it's too tight on one side or the other it can pull the tail forward or back.

8 Comprehensive Parts List

8.1 Understructure and Base

Part #	Part	Usage	Vendor	Vendor Part ID
LB01	L200 foam	body, face, nose, claws	FoamFactory	XPE2
LB02	J Foam	tail		
LB03	1/2" polyfoam rod	claw detail	foambymail.com	TF112
LB04	1/2" reticulated foam	face and neck		
LB05	1/8" plywood	mouth palate		
LB40	14mm wooden beads	tail	amazon/Bronagrand	B07M65MKW6
LB43	3/32 copper welding rod	whiskers/moustache base	(brand Kiswel T-50)	
LB44	1/2" poplar dowel	Internal arm structure	Lowe's	Item #19382
LB45	5/8" poplar dowel	claw support structure	Lowe's	Item #811356
LB46	1/2" polyfoam	arm	foambymail.com	PE17-_1

8.2 Hardware

Part #	Part	Quantity	Usage	Vendor	Vendor Part ID
LB06	Routing eyebolt	2	tail to fin bungee attachment	mcmaster	9489T52
LB07	6-32 lock nut	2	tail to fin bungee attachment	mcmaster	91831A007
LB08	10-24 lock nut	2	claw to body attachment	mcmaster	91831A011
LB09	316 stainless steel washer	4	claw to body attachment	mcmaster	91525A115
LB10	Lubricated 1065 Spring Steel Wire		marionette rod	mcmaster	9667K55
LB11	Black Dacron		Marionette string	Bass Pro Shop	298211
LB12	5/16" 4-40 philips flat undercut screw	6	Attach finger loops to mouth plate	McMaster-Carr	91099A160
LB48	6-32 Bent Closed Routing Eyebolt	6	internal claw to arm	McMaster-Carr	9489T52

			attachment		
LB49	10-24 Bent Closed Routing Eyebolt	4	internal claw to arm and arm to body attachment	McMaster-Carr	9489T47
LB50	S Biner	2	claw to arm attachment	Amazon	B001FQLS18
LB51	1 Inch key ring	2	internal arm structure	Amazon	B071KSGQV7

8.3 Fabric and Fibers

Part #	Part	Usage	Vendor	Vendor Part ID
LB13	F3 Fleece dyed			
LB14	Gutterman thread color 278	machine sewing areas	wawak	
LB15	white 1" velcro hook and loop	tail spandex to body attachment		
LB16	snap tape	body fleece to tail spandex	wawak	SRK101WH
LB17	White milliskin matte spandex	tail cover	spandex house	MMT-01
LB18	leather	finger loops		
LB19	White nylon thread	all stitching	wawak	ATDP1000
LB41	1/8" black bungee	stringing tail together	amazon/SGT Knots	
LB52	1/8" soft leather	internal claw structure		
LB53	white milliskin matte spandex	under stomach cover	spandex house	MMT-01

8.4 Custom Made Parts

Part #	Part	Quantity	Usage	Vendor	Filename
LB20	eye - pupil	1	eyes	Lo	** All Lobster 3D Files are in the Box Drive here: https://disney.box.com/s/2skmqf0e5wftvktvsnrng4e7sd7suokk

LB21	eyes - case	1	eyes	Lo	
LB22	marionette rod	1	marionette rod handle	David/Tom	
LB23	marionette rod caps	2	wire caps on handle	Tom	
LB42	bushings	28	tail	Tom	

8.5 Paints and Dyes

SDS sheets are available in the separate SDS Project Packet.

Part #	Part	Usage	Vendor	Vendor Part ID
LB24	Wild Fire Optical white	pin stripe detail		
LB25	Wicked Colors – W007 Blue	Tail & Claw shading paint	Airbrush Paint Direct	W007
LB26	Wicked Colors – W028 Fluorescent Blue	Tail & Claw shading paint	Airbrush Paint Direct	W028
LB27	Createx Airbrush Colors – 5401 Violet	Tail Shading paint	Airbrush Paint Direct	5401
LB28	Createx Wicked Colors W022	Mouth Pallet paint	Amazon	W022
LB29	Modern Masters OPTICAL WHITE	Body Shadows & Decal	Amazon	WF19106
LB30	wild fire paint	lobster eyes		
LB31	645 Blacklight Blue (Neon)	Dye	Dharma Trading Co.	645
LB32	625 Royal Blue	Dye	Dharma Trading Co.	625
LB33	645 Blacklight Blue (Neon)	Dye - Body	Dharma Trading Co.	645
LB34	647 Aqua Tropic	Dye - Body	Dharma Trading Co.	647
LB35	623 Brilliant Blue (Primary)	Dye - Body	Dharma Trading Co.	623
LB36	Wicked Colors – W007 Blue	Body Shadows & Decal	Airbrush Paint Direct	W007
LB37	Wicked Colors – W028 Fluorescent Blue	Body Shadows & Decal	Airbrush Paint Direct	W028

8.6 Glues, Treatments, Coatings, and Chemicals

SDS sheets are available in the separate SDS Project Packet.

Part #	Part	Usage	Vendor	Vendor Part ID
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LB38	Translucent Blue Cricut iron on vinyl	sparkle dots on fabric	cricut/Michael's crafts	
LB39	barge	gluing all foam parts	Frankford Leather	BAPCPAR
LB47	Insta-Shield Flame Retardant	Fire treatment	Northeast FireShield	N/A
LB54	Fabri-Tac	gluing fabric to fabric	Amazon	
LB55	gaff tape	on the mouth palate	Amazon	
LB56	fray check	locking in knots and seams for the snaps	Amazon	
LB57	black hot glue	tail construction	amazon	
LB58	E6000	Claw construction	Lowes	